

KING COUNTY ROAD STANDARDS 1993

CHAPTER 3. DRIVEWAYS, WALKS, & TRAILS

3.01 Driveways

- A. Dimensions, slope, and detail shall be as indicated in Drawings No. 2-001, 3-003, 3-004, 3-005 and 3-006, as further specified in the following subsections. See Section 2.13 for entering sight distance requirements.
- B. Conditions for Approval of New Driveways:
 - 1. Driveways directly giving access onto arterials may be denied if alternate access is available.
 - 2. All abandoned driveway areas on the same frontage shall be removed and the curbing and sidewalk, or shoulder and ditch section, shall be properly restored.
 - 3. Maintenance of driveway approaches shall be the responsibility of the owner whose property they serve.
 - 4. For a commercial establishment on a shoulder and ditch type road, where development of adjoining lands and highway traffic assume urban characteristics as determined by the Reviewing Agency, the frontage shall be finished with curb, gutter, and sidewalk, with pipe drainage, all in accordance with these Standards. Alternatively, the Reviewing Agency may require the entire frontage area to be graded and paved to the right-of-way line with asphalt or portland cement concrete. In such case, surface drainage shall be intercepted and carried in a closed system as set forth in Chapter 7. Access shall be limited by means of a six-inch curbing. See Extruded Asphalt or Cement Concrete Curb detail, Drawing No. 3-002.
 - 5. For driveways crossing an open ditch section, culverts shall be adequately sized to carry anticipated stormwater flows and in no case be less than 12 inches in diameter. The property owner making the installation shall be responsible for determining proper pipe size. The Reviewing Agency may require the owner to verify the adequacy of pipe size.

C. Location and Width of New Driveways. Refer to Drawing No. 3-006.

1. A residential driveway shall typically serve only one parcel. A driveway serving more than one parcel shall be classed as a commercial driveway or a private street, except as provided in 3.a. and 3.b. below.
2. On frontages 75 feet or less, no more than one driveway per lot shall be constructed; on frontages over 75 feet, two or more driveways per lot may be permitted, subject to approval by the Reviewing Agency.
3. No portion of driveway width shall be allowed within 5 feet of side property lines in residential areas or 9 feet in commercial areas except as follows:
 - a. A joint use driveway tract may be used to serve two parcels:
 - (1) Minimum tract width in urban areas shall be 20 feet with an 18 foot paved surface, cross slope in one direction and curb or thickened edge on one side. Minimum tract length shall be 20 feet from right-of-way line. Radius returns on paved apron shall have 10-foot radii.
 - (2) Minimum tract width in rural areas shall be 20 feet; 30 feet if a ditch is required. Minimum tract length shall be 20 feet from right-of-way line. Radius returns on paved apron shall have 10-foot radii.
 - (3) Driving surface (rural areas) shall be 18 feet, paved or gravel, with a paved apron from the edge of pavement of intersecting street to right-of-way line.
 - (4) The Reviewing Agency may allow use of an easement if the only access to a serving roadway is through an adjacent parcel not owned by the applicant or for urban residential short plats to satisfy minimum lot width requirements.
 - b. Driveways may utilize full width of narrow "pipe-stem" parcels or easements if approved by Reviewing Agency.
 - c. On cul-de-sac bulbs as necessary for proposed residential access.
4. Grade transitions, excluding the tie to the roadway, shall be constructed as smooth vertical curves. Ties to the roadway shall be constructed as shown in Drawings 3-003 and 3-004. The maximum

change in driveway grade, within the right-of-way, shall be 8% within any 10 feet of distance on a crest and 12% within any 10 feet of distance in a sag vertical curve. Driveway shall be graded to match into possible future widened road section without encroachment into graded shoulder or sidewalk. The design engineer for proposed developments shall consider the access driveway profile when designing the serving road to ensure that required grade transitions can be complied with considering building set back and lot terrain conditions.

- 5. Driveways in rolled curb sections may be constructed abutting and flush with sidewalk or back of curb without gapping or lowering height of curb.
- D. Existing driveways may be reconstructed as they exist provided such reconstruction is compatible with the adjacent road.
- E. For commercial or industrial driveways with heavy traffic volumes or significant numbers of trucks, the Reviewing Agency may require construction of the access as a road intersection. This requirement will be based on traffic engineering analysis submitted by the applicant that considers, among other factors, intersection spacing, sight distance and traffic volumes.
- F. Notwithstanding any other provisions, driveways will not be allowed where they are prohibited by separate County Council action or where they are determined by the Engineer or Reviewing Agency to create a hazard or impede the operation of traffic on the roadway.

3.02 Concrete Sidewalks

- A. Shall be required on urban category, curb and gutter type streets as follows:
 - 1. On all arterials, neighborhood collectors, subcollectors, multiple-dwelling and business access streets, both sides.
 - 2. On subaccess streets and industrial access streets, one side.
 - 3. On minor access streets (commercial), both sides unless alternative routes are provided for pedestrians.
 - 4. On minor access streets (residential) exceeding 150 feet and on any cul-de-sacs with off-street walkways extending from their termini to other streets, parks, schools, bus stops, or other pedestrian traffic generators, one side. On cul-de-sacs, sidewalks shall extend around bulb to intersect off-street

walkway. Other extended off-street walkways may be required by the Reviewing Agency to provide direct connections for ease and safety of pedestrians.

B. Shall be constructed:

1. Next to the curb unless planting strips are part of the design and are approved by the Engineer as part of a landscaping plan.
2. Back of planting strips where planting strips are to be constructed.
3. At least five feet wide on residential and commercial access streets. This means five feet clear of mailboxes or other obstructions, except where approved as a variance. Width shall be minimum six and one-half feet on arterials if curb is next to traveled lane (but not necessary next to designated parking or bike lanes). The additional width, one and one-half feet or more, may be finished to match the sidewalk or may be finished with contrasting texture, asphalt concrete, brick, or paving blocks as approved by the Reviewing Agency or Engineer.
4. At least eight feet wide:
 - a. In business/commercial districts where most of the store frontage is within 80 feet of the street right-of-way.
 - b. Within the curb radius returns of all arterial intersections where curb ramps are required.
 - c. Within designated bus zones to provide a landing area for wheel chair access to transit services.
5. With specified width greater than eight feet where Engineer or Reviewing Agency determines this is warranted by expected pedestrian traffic volume.
6. With portland cement concrete surfacing as provided in Sections 3.03 and 4.01. See specifications for joints in Section 3.04 and Drawing No. 3-001.

3.03 Curbs, Gutters and Sidewalks

- A. Subgrade compaction for curbs, gutters, and sidewalks shall meet a minimum 90 percent of maximum density.

- B. Concrete for curbs, gutters, and sidewalks shall be Class 3000, furnished and placed in accordance with WSDOT/APWA Standard Specifications, Sections 6-02, 8-04, and 8-14. Cold weather precautions as set forth in WSDOT/APWA Standard Specifications Sections 5-05.3(14) and 6-02.3(6)A shall apply.
- C. Extruded cement concrete curb shall be anchored to existing pavement by either steel tie bars or adhesive in conformance with WSDOT/APWA Standard Specification Section 8-04.
- D. Extruded asphalt curbs shall be anchored by means of a tack coat of asphalt in accordance with WSDOT/APWA Standard Specification Section 8-04.

3.04 Expansion and Dummy Joints. See Drawing No. 3-001.

- A. An expansion joint consisting of 3/8" or 1/4" x full depth of premolded joint material shall be placed around fire hydrants, poles, posts, and utility castings and along walls or structures in paved areas. Joint material shall conform to the requirements of ASTM D994 (AASHTO M33).
- B. A dummy joint consisting of 3/8" or 1/4" x 2" of premolded joint material shall be placed in curbs and sidewalks at a minimum of 15 foot intervals and at sides of drainage inlets. When curbs and/or sidewalks are placed by slip-forming, a premolded strip up to 1/2" thick and up to full depth may be used.
- C. Dummy joints in sidewalk shall be located so as to match the joints in the curb whether sidewalk is adjacent to curb or separated by planting strip.
- D. Tool marks consisting of 1/4" V-grooves shall be made in sidewalk at five foot intervals, intermediate to the dummy joints.
- E. As alternative to expansion joints around structures, reinforcing bars may be embedded in concrete on four sides of structures.
- F. Interface between curb and adjacent sidewalk on integral pour construction shall be formed with 1/4" radius edging tool. On separate pour construction an expansion joint consisting of 3/8" or 1/4" x full depth of premolded joint material shall be placed between the curb or thickened edge and the adjacent sidewalk.

3.05 Curb Ramps

On all streets with vertical or rolled curb, ramped sections to facilitate passage of handicapped persons shall be constructed through curb and sidewalk at street intersections and other crosswalk locations. See Drawings No. 4-002 and 4-003. Where a ramp is constructed on one side of the street, a ramp shall also be provided on the opposite side of the street. Curb ramps shall be positioned so that a ramp opening is situated within the marked crosswalk or crossing area if unmarked.

3.06 Concrete Steps, Metal Handrail and Handicapped Access Ramps

- A. Steps shall only be used where acceptable alternative access is available for handicapped access and there is a need for a separate stairway. Where used, concrete steps shall be constructed in accordance with Drawing No. 5-008 or other design acceptable to the Engineer or Reviewing Agency and consistent with the WSDOT/APWA Standard Specifications. Handrails, whether for steps or other applications, shall be provided consistent with Drawing No. 5-008 and the WSDOT/APWA Standard Specifications.
- B. Ramps used to provide handicapped access shall have a maximum slope of 12:1 with a maximum rise of 30 inches between landings. Landings shall have a minimum length of five feet and should be of sufficient width to allow wheelchairs to pass, generally five feet minimum width for two way traffic.

3.07 Asphalt Shoulders

- A. In urban areas, asphalt paved shoulders may be used where approved by the Engineer or Reviewing Agency on existing roads to provide for bicycle and pedestrian use as specified in Section 1.03B and to provide continuity of design. When allowed, paved shoulders shall be placed in conformance with Sections 2.02 and 2.03.
- B. In rural areas, asphalt paved shoulders which may serve as walkways and bikeways, shall be provided on both sides of any arterials or other roads designated in the King County Nonmotorized Transportation Plan or as directed by the Engineer or Reviewing Agency.
- C. Where shoulders are paved on one side only, they shall be delineated by a four-inch white thermoplastic edge line.

3.08 Separated Walkways, Bikeways and Trails

Separated pedestrian, bicycle and equestrian trails shall be provided where designated in community and functional plans or where required by the Engineer or Reviewing Agency because of anticipated significant public usage. Separated facilities are typically located on an easement or within the right-of-way when separated from the roadway by a drainage ditch or barrier. Where separate walkways, bikeways, or equestrian trails intersect with motorized traffic, sight distance, marking and signalization (if warranted) shall be as provided in MUTCD. Facilities shall be designed as follows:

- A. Separated asphalt walkways are designed primarily for pedestrians and are typically located within the right-of-way or easement. Minimum width shall be five feet with asphalt surfacing as indicated in Section 4.01D.
- B. Neighborhood pathways are soft surface facilities designed for pedestrians and equestrians. Such pathways shall be a minimum four feet wide with at least one and one-half foot clearance to obstructions on both sides and 10 foot vertical clearance. Pathways shall be designed and located so as to avoid drainage and erosion problems. Pathways shall be constructed of two and one-half inches of crushed surfacing top course or wood chips over cleared native material as approved by the Reviewing Agency.
- C. Multi-purpose trails are typically designated for bicycle and pedestrian use and in general follow a right-of-way independent from any road. Multi-purpose trails shall be designed to bicycle path standards as described in Section 3.10.

3.09 School Access

School access required as part of development approval shall be provided by an asphalt walkway, concrete sidewalk or full width delineated shoulder unless another alternative is available and approved by the Engineer through a road variance request.

3.10 Bikeways

- A. Bikeways are generally shared with other transportation modes, although they may be provided exclusively for bicycle use. Bikeways are categorized below based on degree of separation from motor vehicles and other transportation modes. This classification does not denote preference of one type over another. Bikeways are categorized as follows:

Bike Path (Class I): A separate paved multipurpose trail for the principal use of bicycles and other nonmotorized modes. Bike paths are 10 feet wide except in high usage areas where they should be 12 feet wide.

Bike Lane (Class II): A portion of the road that is designated by pavement striping for exclusive bicycle use. Bicycle lanes may be signed as part of a directional route system. Bicycle lanes are five feet wide on a curbed road and minimum four feet wide as a shoulder bike lane.

Wide Curb Lane (Class III): A road that provides a widened paved outer curb lane to accommodate bicycles in the same lane as motor vehicles. Lane width shall be increased at least three feet.

Shoulder: A lane contiguous to the traveled way but separated by a stripe. Most common in rural areas. Typically shared with pedestrians and occasional emergency vehicle access.

Shared Roadway: All roads not categorized above where bicycles share the roadway with motor vehicles.

B. A bikeway shall be provided:

1. Wherever called for in the Nonmotorized Transportation Plan, King County Transportation Plan, King County Comprehensive Plan, community plan, Capital Improvement Program or Transportation Needs Report.
2. When substantial bike usage is expected which would benefit from construction of a bicycle facility.

C. Striping and signing shall be implemented as follows:

1. Pavement markings shall be used on bike lanes and paths according to MUTCD.
2. The design of all signalized intersections shall consider bicycle usage and the need for bicyclists to actuate the signal.

D. The planning and design of bikeways in any category shall be in accordance with Section 1020 of the WSDOT Design Manual and the AASHTO Guide for the Development of Bicycle Facilities, current edition.

3.11 Equestrian Facilities

A. Equestrian facilities adjacent to the traveled way shall be provided where proposed by the King County Nonmotorized Transportation Plan or as required by the Engineer or Reviewing Agency. Facilities shall be provided as follows:

1. Shoulders adjacent to the traveled way intended for equestrian use shall be surfaced full-width, minimum four feet with eight feet desirable. Surface shall be two and one-half inches of crushed surfacing base course and one and one-half inches of crushed surfacing top course.
2. A separated equestrian trail shall be constructed with an 18 percent maximum grade, 10-foot vertical clearance and a five-foot wide pathway zone. The trail shall be constructed of native soil or, where drainage or erosion problems are present, a minimum of two and one-half inches of crushed surfacing top course on graded and compacted native soil. Native soil which is not free draining shall be removed and replaced with free draining soil as necessary to provide a maintainable and well-drained subgrade. Additional crushed surfacing, cinders or other stabilizing materials shall be required if heavy usage is anticipated or if there is any evidence of instability in the subgrade; including free water, swamp conditions, fine-grained or organic soils, slides or uneven trails.